UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,113	08/31/2001	Stephan R. Yhann	07844-477001/P441	2091

			EXAMINER
21876	7590	02/24/2005	MENBERU, BENIYAM

FISH & RICHARDSON P.C.
3300 DAIN RAUSCHER PLAZA
MINNEAPOLIS, MN 55402

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _31 August 2001_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-54_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-54_ is/are rejected.

7)☒ Claim(s) ~~9,10,27 and 54~~ is/are objected to. [handwritten: AW]

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 August 2001_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1.   The oath or declaration is defective. A new oath or declaration in

compliance with 37 CFR 1.67(a) identifying this application by application

number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not include the notary's signature, or the notary's signature is in the
> wrong place.

Specification

2.   The disclosure is objected to because of the following informalities:

On page 2, lines 8-9, "U.S. Patent No. 5295235" should be "U.S. Patent

No. 5295236".

On page 2, line 20, "side The" should be "side. The".

On page 7, line 16, "The vector can may be" should be "The vector can

be".

On page 9, line 21, "pixels that are is" should be "pixels that are".

On page 10, lines 21-22,"when image A is rendered after image A" should

be "when image A is rendered after image B".

On page 12, line 31, "What is claimed is:" should be in the claim section

on the following page.

 Appropriate correction is required.

Claim Objections

3.   Claims 9, 18, 27, and 54 are objected to because of the following

informalities:

A period is missing at the end of each of the claims.

On claim 27, there is a period missing after the claim number "27".

Appropriate correction is required.

Drawings

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they do not include the following reference sign(s) mentioned in the

description: reference 430 on page 8, lines 11 and 13. Corrected drawing sheets

in compliance with 37 CFR 1.121(d) are required in reply to the Office action to

avoid abandonment of the application. Any amended replacement drawing sheet

should include all of the figures appearing on the immediate prior version of the

sheet, even if only one figure is being amended. Each drawing sheet submitted

after the filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the

changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection

to the drawings will not be held in abeyance.

5.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: reference 600 and 615 in Figure 6. Corrected drawing sheets in

compliance with 37 CFR 1.121(d), or amendment to the specification to add the

reference character(s) in the description in compliance with 37 CFR 1.121(b) are

required in reply to the Office action to avoid abandonment of the application.

Any amended replacement drawing sheet should include all of the figures

appearing on the immediate prior version of the sheet, even if only one figure is

being amended. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or

"New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by

the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not

be held in abeyance.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

7.   Claims 1, 2, 5, 8, 10, 11, 14, and 17 are rejected under 35 U.S.C. 103(a)

as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of

European Patent Application No. EP0840500 A2 to Rocheleau et al.

Regarding claims 1 and 10, Hollinger discloses a computer-implemented

method and program (column 2, lines 63-65) for identifying, an effective

centerscan object color along an edge between an overscan object and a centerscan object, the overscan object having a higher paint order than the centerscan object (column 3, lines 27-29), the method comprising:

identifying a set of overscan boundary pixels, the overscan boundary pixels that are intersected by the edge (column 3, lines 13-20);

creating a vector pointing in a direction of the centerscan object relative to the edge (column 3, lines 18-21, lines 27-29);

applying the vector to each overscan boundary pixel in the set of overscan boundary pixels to identify a corresponding set of centerscan boundary pixels;

and mapping each centerscan boundary pixel to the centerscan object to identify a color of the centerscan boundary pixel (column 3, lines 7-12, lines 17-20, lines 50-52). However Hollinger does not disclose a method for mapping the edge to the device space.

Rocheleau et al disclose a method for mapping the edge to the device space (column 7, lines 51-58).

Hollinger and Rocheleau et al are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the device space mapping of Rocheleau et al with the color correction system of Hollinger to implement device based color adjustment.

The motivation to combine the reference is clear because in order to use the color processing for trapping purpose it has to be mapped to device space where it will be outputted.

Regarding claims 2 and 11, Hollinger in view of Rocheleau et al teach all the limitations of claim 1 and 10 respectively. Further Hollinger disclosesthe method and program of claim 1, wherein the centerscan object is a raster image and the overscan object is a vector object (column 4, lines 5-7).

Regarding claims 5 and 14, Hollinger in view of Rocheleau et al teach all the limitations of claims 1 and 10 respectively. Further Hollinger in view of Rocheleau et al disclose the method and program, wherein creating a vector comprises: creating a vector specified in device pixels (Rocheleau et al: column 7, lines 51-58; Hollinger: column 4, lines 44-46).

Regarding claims 8 and 17, Hollinger in view of Rocheleau et al teach all the limitations of claims 1 and 10 respectively. Further Hollinger disclosesthe method and program, wherein applying the vector to each overscan object boundary pixel comprises: identifying a device pixel on the centerscan object side of the edge, adjacent to an overscan boundary pixel, as a centerscan boundary pixel (column 3, lines 27-31).

8.   Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of European Patent Application No. EP0840500 A2 to Rocheleau et al further in view of U.S. Patent No. 5542052 to Deutsch et al.

Regarding claims 4 and 13, Hollinger in view of Rocheleau et al teach all the limitations of claims 1 and 10 respectively. However Hollinger in view of Rocheleau et al does not disclose the method and program, wherein identifying a color of the pixel comprises: coloring the centerscan boundary pixel in the device space in accordance with a

center scan rule.

Deutsch et al disclose the method and program wherein identifying a color of the pixel comprises: coloring the center scan boundary pixel in the device space in accordance with a center scan rule (column 10, lines 44-55, lines 66-67; column 11, lines 1-10).

Hollinger, Rocheleau et al, and Deutsch et al are combinable because they are in the similar problem area of color correction. ·

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the pixel identification of Deutsch et al with the color correction system of Hollinger in view of Rocheleau et al to implement color boundary adjustment to be used for trapping purpose.

The motivation to combine the reference is clear because there is a need to differentiate between different types of pixels at a color boundary.

9.   Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of European Patent Application No. EP0840500 A2 to Rocheleau et al further in view of U.S. Patent No. 6031544 to Yhann.

Regarding claims 3 and 12, Hollinger in view of Rocheleau et al teach all the limitations of claim 2. However Hollinger in view of Rocheleau et al does not disclose the method and program, wherein an image resolution differs from a device resolution.

Yhann discloses the method, wherein an image resolution differs from a device resolution (column 6, lines 56-64).

Hollinger, Rocheleau et al, and Yhann are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the resolution adjustment method of Yhann in combination with the color adjustment system of Hollinger in view of Rocheleau et al to implement a practical color correction system.

The motivation to combine the reference is clear because Yhann teaches that different objects need to have different resolution (column 6, lines 60-64).

10.   Claims 6, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of European Patent Application No. EP0840500 A2 to Rocheleau et al further in view of U.S. Patent No. 6345117 to Klassen.

Regarding claims 6 and 15, Hollinger in view of Rocheleau et al teach all the limitations of claims 1 and 10 respectively. However Hollinger in view of Rocheleau et al does not disclose the method and program, wherein creating a vector comprises: creating a vector normal to the edge.

Klassen discloses the method and program wherein creating a vector comprises: creating a vector normal to the edge (column 16, lines 8-12).

Hollinger, Rocheleau et al, and Klassen are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the perpendicular vector method of Klassen with the color correction system of Hollinger in view of Rocheleau et al to implement an accurate color correction system.

The motivation to combine the reference is clear because by using Klassen method for vector creation along an edge smooth variation can be accomplished for use in trapping (column 15, lines 6-15).

Regarding claims 7 and 16, Hollinger in view of Rocheleau et al teach all the limitations of claims 1 and 10 respectively. If the edges are aligned to the device space axis the method and program of Klassen will create a vector normal to an axis in the device space.

11.   Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of European Patent Application No. EP0840500 A2 to Rocheleau et al further in view of U.S. Patent No. 6377711 to Morgana.

Regarding claims 9 and 18, Hollinger in view of Hollinger further in view of Rocheleau et al teach all the limitations of claims 1 and 10. However Hollinger in view of Hollinger further in view of Rocheleau et al does not disclose the method and program of claim 1, further comprising: identifying one or more subsections,

each subsection including one or more contiguous centerscan boundary pixels

having the same color, to be used in trapping.

Morgana discloses the method and program further comprising: identifying

one or more subsections, each subsection including one or more contiguous

centerscan boundary pixels having the same color, to be used in trapping

(column 4, lines 40-59; Figure 9, reference s210, s240, s250).

Hollinger, Rocheleau et al, and Morgana are combinable because they

are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of

ordinary skill in the art to combine the trapping method of Morgana with the color

correction system of Hollinger in view of Rocheleau et al to implement color

trapping.

The motivation to combine the reference is clear because trapping is

necessary for correcting errors in printing as taught by Morgana (column 1, lines

40-45).

12.   Claims 19, 20, 23, 26, 28, 29, 32, 35, 37, 38, 41, 44, 46, 47, 50, and 53

are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No.

5715331 to Hollinger in view of U.S. Patent No. 4855934 to Robinson.

Regarding claims 19, 28, 37 and 46, Hollinger discloses a computer-

implemented method and program for identifying, in a device space, an effective

centerscan object color along an edge between an overscan object and a

centerscan object, the centerscan object having a higher paint order than the

overscan object, the method comprising:

identifying a set of device space pixels that are intersected by the edge (column 3, lines 13-20);

creating a vector pointing in a direction of the centerscan object relative to the edge(column 3, lines 18-21, lines 27-29);

applying the vector to each identified overscan boundary pixel to identify a corresponding centerscan boundary pixel to each identified overscan boundary pixel; and mapping each centerscan boundary pixel to the centerscan object to identify a color of the centerscan boundary pixel (column 3, lines 7-12, lines 17-20, lines 50-52). However Hollinger does not disclose a method for:

a) determining for each pixel in the set of pixels if a center of the pixel maps to the centerscan object;

b) identifying the pixel as a centerscan boundary pixel if the center of the pixel maps to the centerscan object;

c) identifying the pixel as an overscan boundary pixel if the center of the pixel does not map to the centerscan object;

d) mapping the edge to the device space;

Regarding (a)-(c), Robinson discloses a method for determining for each pixel in the set of pixels if a center of the pixel maps to the centerscan object; identifying the pixel as a centerscan boundary pixel if the center of the pixel maps to the centerscan object; identifying the pixel as an overscan boundary pixel if the center of the pixel does not map to the centerscan object (column 6, lines 2-5, lines 15-30; column 8, lines 54-67; column 9, lines 1-15).

Regarding (d), Robinson disclose a method for mapping the edge to the device space (column 3, lines 62-66).

Hollinger and Robinson are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the pixel identification and mapping of Robinson with the color correction system of Hollinger to implement an accurate color correction at a color boundary.

The motivation to combine the reference is clear because Robinson teaches that the method is useful for certain boundaries in mapping application (column 2, lines 12-16).

Regarding claims 20, 29, 38, and 47, Hollinger in view of Robinson teach all the limitations of claims 19, 28, 37, and 46 respectively. Further Hollinger disclosesthe method, wherein the centerscan object is a raster image and the overscan object is a vector object (column 4, lines 5-7).

Regarding claims 23, 32, 41, and 50, Hollinger in view of Robinson teach all the limitations of claims 19, 28, 37, and 46 respectively. Further Robinson discloses the method wherein the creating a vector comprises creating a vector specified in device pixels (column 3, lines 62-66).

Regarding claims 26, 35, 44, and 53, Hollinger in view of Robinson teach all the limitations of claims 19, 28, 37 and 46 respectively. Further Hollinger disclosesthe method and program, wherein applying the vector to each overscan object boundary pixel comprises: identifying a device pixel on the centerscan

object side of the edge, adjacent to an overscan boundary pixel, as a centerscan boundary pixel (column 3, lines 27-31).

13.   Claims 21, 30, 39, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of U.S. Patent No. 4855934 to Robinson further in view of U.S. Patent No. 6031544 to Yhann.

Regarding claims 21, 30, 39, and 48, Hollinger in view of Robinson teach all the limitations of claims 20, 29, 38, and 47 respectively. However Hollinger in view of Robinson does not disclose a method and program wherein an image resolution differs from a device resolution.

Yhann discloses the method, wherein an image resolution differs from a device resolution (column 6, lines 56-64).

Hollinger, Robinson, and Yhann are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the resolution adjustment method of Yhann in combination with the color adjustment system of Hollinger in view of Robinson to implement a practical color correction system.

The motivation to combine the reference is clear because Yhann teaches that different objects need to have different resolution (column 6, lines 60-64).

14.   Claims 22, 31, 40, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of U.S. Patent No. 4855934 to Robinson further in view of U.S. Patent No. 5542052 to Deutsch et al.

Regarding claims 22, 31, 40 and 49, Hollinger in view of Robinson teach all the limitations of claims 19, 28, 37, and 46 respectively. However Hollinger in view of Robinson does not disclose the method and program, wherein identifying a color of the pixel comprises: coloring the center scan boundary pixel in the device space in accordance with a center scan rule.

Deutsch et al disclose the method and program wherein identifying a color of the pixel comprises: coloring the center scan boundary pixel in the device space in accordance with a center scan rule (column 10, lines 44-55, lines 66-67; column 11, lines 1-10).

Hollinger, Robinson, and Deutsch et al are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the pixel identification of Deutsch et al with the color correction system of Hollinger in view of Robinson to implement color boundary adjustment to be used for trapping purpose.

The motivation to combine the reference is clear because there is a need to differentiate between different types of pixels at a color boundary.

15.   Claims 24, 25, 33, 34, 42, 43, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5715331 to Hollinger in view of U.S. Patent No. 4855934 to Robinson further in view of U.S. Patent No. 6345117 to Klassen.

Regarding claims 24, 33, 42, and 51, Hollinger in view of Robinson teach all the limitations of claims 19, 28, 37, and 46 respectively. However Hollinger in

view of Robinson does not disclose the method and program, wherein creating a

vector comprises: creating a vector normal to the edge.

Klassen discloses the method and program wherein creating a vector

comprises: creating a vector normal to the edge (column 16, lines 8-12).

Hollinger, Robinson, and Klassen are combinable because they are in the

similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of

ordinary skill in the art to combine the perpendicular vector method of Klassen

with the color correction system of Hollinger in view of Robinson to implement an

accurate color correction system.

The motivation to combine the reference is clear because by using

Klassen method for vector creation along an edge smooth variation can be

accomplished for use in trapping (column 15, lines 6-15).

Regarding claims 25, 34, 43, and 52, Hollinger in view of Robinson teach

all the limitations of claims 19, 28, 37, and 46 respectively. Further if the edges

are aligned to the device space axis the method and program of Klassen will

create a vector normal to an axis in the device space.

16.   Claims 27, 36, 45, and 54 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 5715331 to Hollinger in view of U.S. Patent

No. 4855934 to Robinson further in view of U.S. Patent No. 6377711 to Morgana.

Regarding claims 27, 36, 45 and 54, Hollinger in view of Robinson teach

all the limitations of claims 19, 28, 37, and 46 respectively. However Hollinger in

view of Robinson does not disclose the method and program, further comprising:

identifying one or more subsections, each subsection including one or more contiguous centerscan boundary pixels having the same color, to be used in trapping.

Morgana discloses the method and program further comprising: identifying one or more subsections, each subsection including one or more contiguous centerscan boundary pixels having the same color, to be used in trapping (column 4, lines 40-59; Figure 9, reference s210, s240, s250).

Hollinger, Robinson, and Morgana are combinable because they are in the similar problem area of color correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the trapping method of Morgana with the color correction system of Hollinger in view of Robinson to implement color trapping.

The motivation to combine the reference is clear because trapping is necessary for correcting errors in printing as taught by Morgana (column 1, lines 40-45).

Other Prior Art Cited

1.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6556313 to Chang et al disclose vector method for color misregistration.

U.S. Patent No. 5295236 to Bjorge et al disclose a technique for trapping.

U.S. Patent No. 5721572 to Wan et al disclose method for color gamut descriptor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number is (703) 306-3441. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (703) 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (703) 306-5631. The group receptionist number for TC 2600 is (703) 305-4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.
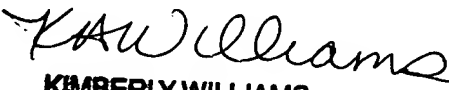
For more information about the PAIR system, see <http://pair-

direct.uspto.gov/>. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

Patent Examiner

Beniyam Menberu

BM

02/18/2005

KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER